An Industry Perspective on AGTSR Accomplishments

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Introduction

Good morning. As a participant in the Advanced Gas Turbine Systems Research (AGTSR) activity since its conception, I would like to share some of my thoughts — both pros and cons but primarily pros — on the accomplishments made by AGTSR, and the contribution of the AGTSR Industrial Review Board (IRB) in the selection of university projects.

Allison's Role

I have labeled this chart as Allison's role, and as you will see from presentations by other members of the IRB, these are essentially the same type of elements that other companies are also emphasizing within their roles in the AGTSR.

Allison values the importance of applied research. The work that is being done by universities has been more in the applied research arena than in basic research. This is the area that is applicable and useful for industry. This list is similar to what Larry Golan showed earlier. These are Allison's priorities, but not necessarily in the order that they are listed because the priorities change from year to year. However, combustion seems to be Allison's prime concern now. We are finally learning enough about combustion problems that it will probably have a much lower priority than some of the other issues in the near term. Nevertheless, combustion will still be a concern.

Six of the projects in which Allison has been involved with university activities are listed here. I do not want to go through each one of them. I have noted six, but there are others that Allison has been involved in. But because of the direct applications of the work that is being done by these universities to Allison interests, I am noting work done at (1) Purdue, Clemson, Minnesota, and Cornell on probability density function (PDF) modeling; (2) Georgia Tech on thermal barrier coatings (TBCs); and (3) Penn State on unsteady aeromarkets.

AGTSR Activities

The proposal evaluation process has gone through what we call in industry a Reengineering Activity. The process has come a long way from the first year when proposals were made available to us. Then, we started working at 8 a.m. and worked sometimes until 11 p.m. for 2 days to review all the proposals. Last year, we were provided those proposals well in advance. It helped us to come prepared to the consortium and to the meetings, and to provide our assessments from technical and business perspectives, rather than spending time reviewing proposals at the meeting.

The workshops listed by Larry Golan have provided useful dialogue and a sharp focus on specific industry research needs. Communication among IRB members has been effective and member presence at AGTSR-sponsored conferences is increasing. I think the Consortium is actively promoting advanced gas turbines systems and their use.

Involving Student Interns in AGTSR activities is valuable to the students and the industry members of the AGTSR. I would like to urge the AGTSR through DOE to promote the availability of both graduate and undergraduate students for AGTSR activities. Allison has benefited from this involvement tremendously. I think this is a good way to make interns aware of the needs of industry.

Future AGTSR Work

The last chart I have shows my views on what I recommend for future AGTSR work. Continue with the workshops to get input from other organizations. For example, US Air, NASA, and others have been invited to participate in AGTSR activities in an advisory role. I would like to suggest that we revisit this idea and see if we can get them involved. I would like to urge having more university faculty involved. And of course, I have been after Dan to increase the number of student interns available to industry members.

Yesterday Joe Strakey emphasized the issue of CO_2 reduction and the need to incorporate CO_2 reduction goals into the ATS Program. Pressurized fuel cells is an area that the AGTSR could look at. Renewable fuels — this is an area that has not been touched by AGTSR. We have concentrated mainly on gas-fired issues and we should now look at CO_2 gettering and the removal of CO_2. Another issue I would like to add concerns intercoolers. Intercooling is becoming more and more acceptable as a means of increased megawatt capability. I think we need to look at the transient conditions associated with intercooling. Thank you.